M. R. DE FRANCE.

BRAKE SHOE.

APPLICATION FILED MAY 26, 1914.

1,114,343.

Patented Oct. 20, 1914.

FIG. 1.

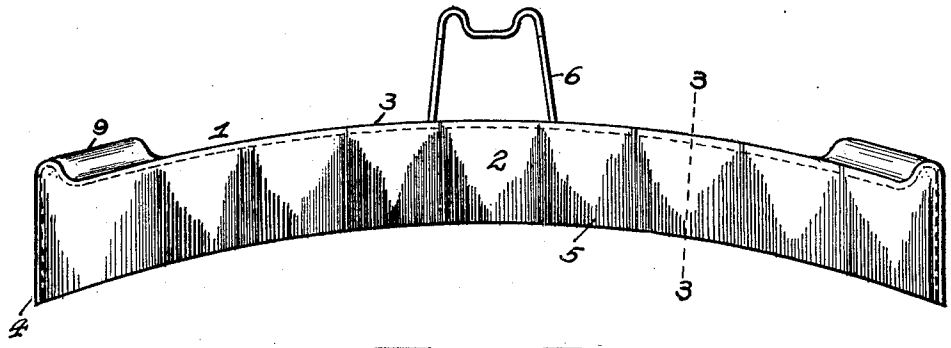


FIG. 2

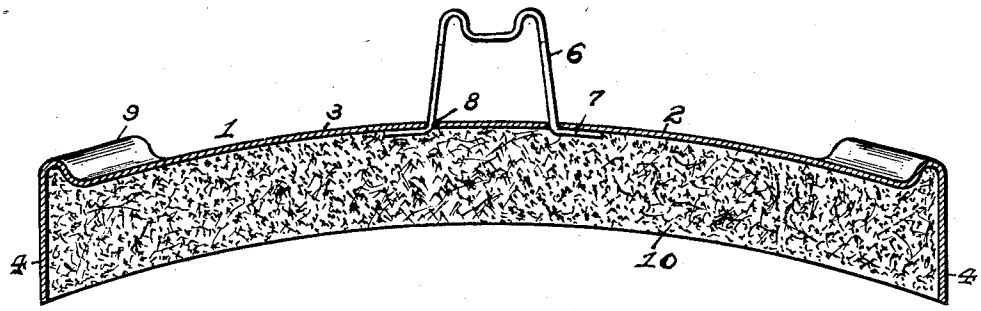
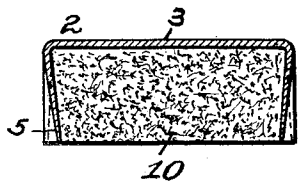


FIG. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

MURRELL R. DE FRANCE, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO PITTSBURG BRAKE SHOE COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

BRAKE-SHOE.

1,114,343. Specification of Letters Patent. Patented Oct. 20, 1914.

Application filed May 26, 1914. Serial No. 841,004.

To all whom it may concern:

Be it known that I, MURRELL R. DE FRANCE, a citizen of the United States, and a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Brake-Shoes; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to brake shoes and more particularly to brake shoes having a sheet steel casing with frictional material therein for checking the speed of railroad trains, etc.

The object of my invention is to provide a cheap, simple and efficient form of brake shoe which can be quickly and conveniently mounted on the usual hanger and one in which the casing may be pressed into shape for the insertion of the refractory frictional material.

A further object of my invention is to provide a brake shoe having a pressed steel casing in which the side walls of the same are tapered in order to reduce the bearing surface of the steel on the tread of the wheel.

My invention consists, generally stated, in the novel arrangement, construction and combination of parts as hereinafter more specifically set forth and described and particularly pointed out in the claims.

To enable others skilled in the art to which my invention appertains to construct and use my improved brake shoe, I will describe the same more fully, referring to the accompanying drawing in which:—

Figure 1 is a side view of my improved brake shoe. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a cross sectional view of the same on the line 3—3 of Fig. 1.

Like symbols of reference herein indicate like parts in each of the figures of the drawing.

As illustrated in the drawing, my improved brake shoe 1 comprises an inclosing casing 2 and a filling of frictional material for bearing on the car wheel. The casing 2 is preferably formed of sheet or plate metal having a sufficient degree of strength and consists of the back wall 3, the end walls 4 and the side walls 5. The casing is open at its front and is curved to conform to the periphery of the car wheel upon which said shoe is to be used. The usual supporting lug 6 is connected or fixed to the back 3 of the casing 2 in any suitable manner for connecting the shoe 1 to the ordinary brake-head or hanger (not shown), and is preferably formed of a separate piece of material, as shown, and has its inner ends 7 passed through slots 8 in said back and turned against the inner face of the same to secure said lug in position. At each end of the back 3 is a short bearing surface 9 which is adapted to abut against bearings on the ends of the brake-head or hanger, while central or intermediate bearings on said head or hanger are adapted to abut against said back on each side of the lug 6. The sides 5 of the casing 2 are tapered, as shown in Fig. 3, while the end walls 4 thereof are uniform in thickness throughout their entire height as shown in Fig. 2. In addition to being tapered, the side walls 4 are preferably corrugated as shown and such casing contains the frictional member 10 for exerting the rubbing or breaking action on the car wheel. This frictional member 8 consists of any suitable material such as cast iron or a composition of materials specially prepared for the purpose, and of such a character as to exert proper and sufficient friction upon the periphery of the car wheel without any undue or excessive pressure. These compositions are well known in the art and the filling 10 is either cast into the casing 2 when set in a mold or inserted in such casing under pressure and retained in position after hardening, by the walls 3, 4 and 5 of the said casing.

My improved brake shoe may have the side walls 5 of the casing 1 formed straight or made with the corrugations. One of the greatest objections to the use of brake shoes having pressed steel casing is the fact that the edges of the casing gradually score or bite into the periphery of the car wheel and thus injure the same and this is particularly true of casings having their side walls straight. Corrugating such side walls assists materially in reducing this objectional feature as it distributes the area onto which said walls bear. It will be noticed that I have tapered the side walls 5 of the casing 2 so that the metal at the open end of the shoe will be about one-half the thickness of

the metal at the point where it joins the back wall 3. My particular reason for thus tapering the side walls 5 is that in the ordinary sheet steel casing the continual wear of the same on the wheel will cause the metal at the edge of such casing to melt and pile up so that a greater area of steel will bear on the tread of the wheel than the actual area of the side of the casing. This is very true in the use of sheet steel casings on brake shoes for passenger or fast train service, and is particularly so in cases where the emergency brake is applied. In such a case the metal is very readily melted and spreads so as to cause larger wearing surfaces and consequently larger scores in the tread of the wheel. The metal in the side walls 5 cannot be reduced in thickness throughout its entire height on account of weakening the same so that it would not have sufficient strength to hold the frictional member 8 in position in the casing 1, whereas the tapering of said side walls will not reduce the strength of the same and will tend to reduce the amount of steel bearing on the tread of the wheel. This reduction in the area of the steel of the side walls 5 will also enable the shoe to be used longer than shoes with the metal in said walls being uniform in thickness, as the latter type will have a great amount of steel bearing on the tread of the wheel when they are worn down about half way and are then usually discarded, while with my improved type the metal will not pile up or broaden out nearly so readily so that it can be used longer than the shoe having its side walls uniform in thickness.

It will readily be seen that when the shoe is first applied to the car wheel there will be but half the amount of wearing surface of steel thereon compared to the amount bearing on such wheel when the side walls are made uniform in thickness and consequently there will be less metal to melt and pile up when the friction becomes excessive.

Various modifications and changes in the design and construction of my improved brake shoe may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as my invention and desire to secure by Letters Patent is:—

1. A brake shoe comprising a sheet metal casing and a filling of frictional material, said casing having the material in its side walls tapered.

2. A brake shoe comprising a sheet metal casing and a filling of frictional material, said casing being provided with ends and sides around said material and terminating flush with the bottom edge thereof, and the material forming said sides being tapered.

3. A brake shoe comprising a sheet metal casing and a filling of frictional material, said sides being corrugated and the material forming said sides being tapered.

4. A brake shoe comprising a sheet metal casing and a filling of frictional material, said casing being provided with ends and sides around said material and terminating flush with the bottom edge thereof, said sides being corrugated and the material forming said sides being tapered.

5. As a new article of manufacture, a sheet steel brake shoe casing having the material forming its side walls tapered.

6. As a new article of manufacture, a sheet steel brake shoe casing having the material forming its side walls corrugated and tapered.

In testimony whereof, I, the said MURRELL R. DE FRANCE, have hereunto set my hand.

MURRELL R. DE FRANCE.

Witnesses:
T. B. HUMPHRIES,
M. A. BUSHMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."